

Vol. I.

No. 1.

TORONTO, JANUARY, 1894.



The Biological Review of Ontario.

CONTENTS.

- On the Occurrence of *Uria lomvia* on Lake Ontario.
—G. E. ATKINSON AND HUBERT H. BROWN.
- Polyborus cheriway* on Lake Superior.
—G. E. ATKINSON.
- Capture of Purple Gallinule near Toronto.
—HUBERT H. BROWN.
- Æstrelata hasitata* taken at Toronto.
—HUBERT H. BROWN.
- Mourning Warbler Breeding at Toronto.
—C. W. NASH.
- Yellow and Black Rail in Ontario.
—C. W. NASH.
- Cistothorus stellaris* taken at Toronto.
—C. W. NASH.
- Canadian Galls and Their Occupants. *Diplosis eregeroni*, N. S.
—WM. BRODIE.
- Caloptenus femur-rubrum*
—GEORGE BRODIE AND W. A. BRODIE.

Published by
THE BIOLOGICAL SOCIETY OF ONTARIO.

THE BIOLOGICAL REVIEW OF ONTARIO.

VOL. I.

TORONTO, JANUARY, 1894.

NO. I.

THE JOURNALISTIC field in Canada is a well cultivated one; nearly every profession and calling is represented within its bounds.

There is, however, one important department of science unrepresented in Ontario, and that is General Biology, the science of life forms; and it is with a view of supplying this desideratum that the BIOLOGICAL REVIEW OF ONTARIO is launched.

Speaking in more particular terms, the objects of the publishers of THE REVIEW are, the collection and publication of important original observations relating to the fauna and flora, existing and extinct, of the Province of Ontario; to determine the life histories of all native specific life forms, and from time to time publish monographs of the same; and to compile and publish a bibliography of all literature relating to native life forms from Canadian publications.

While the main purpose of THE REVIEW is the furtherance of Biological science in general, in our Province, there are many practical applications of the science to which we purpose devoting special attention.

One of these is the relation of insect and other life forms, injurious or beneficial, to forest trees, cultivated crops, and to

domestic animals; another is the culture of our native food fishes, and the introduction and acclimatization of useful foreign species. Both of these come into touch with our daily life and business, and are of very great commercial importance.

The part, whether beneficial or otherwise, that the many and varied forms of life play in the production of the fruits of the earth is yet to a great extent unknown; much as science has already done in this respect, much remains to do, and the possibilities of the rewards which Nature still has hid in her lap for the student who patiently sits at her feet questioning, is an incentive too powerful to be resisted.

To aid us in the attainment of the object indicated, we have enlisted the co-operation of a number of competent observers residing in different parts of the Province, who report, from time to time, such records as are deemed worthy of publication.

This staff of co-workers will be enlarged as opportunities afford, and we shall always be glad to receive contributions of records and of specimens from all who take an interest in the study of life forms.

ON THE OCCURRENCE OF *URIA LOMVIA* ON LAKE ONTARIO.

ON NOVEMBER 29, 1893, Mr. O. Spanner received a specimen of this Guillemot, taken on Toronto Bay by Mr. Curtis. The bird was in good condition, and had pitched among some decoy ducks, near the eastern gap.

On December 7, a flock pitched on the lake shore of Ashbridge bar, in shelter of the breakwater. Mr. Curtis secured four out of this flock, two of which he sold to Mr. Jacobs and two to Mr. Spanner.

On December 8-9, almost every hunter around the bay observed or secured Guillemots. Upwards of twenty-eight were taken on these two days; Mr. Curtis shot six, Mr. McDonald four. Mr. J. Stairs took three off the western bar, and Mr. W. McKay one. Mr. C. Nurse secured one on Humber

Bay. Two by George Webb and one by Mr. Bunker were taken on the western bar. Mr. J. Maughan, Jr., received two from unknown parties.

On the latter date Mr. S. Dippie secured one off Kew Beach, but did not keep it. Mr. J. Goodwin picked up a dead one on the island. Mr. George Hope received one, and Campion Bros. two, all taken off the western bar, and George Ward shot one near the eastern gap.

On December 11, Mr. Curtis secured three specimens, two of which he sold to Mr. Jacobs and one to Mr. Spanner.

On December 12, Mr. McDonald secured one, which he sold to Mr. Spanner.

On December 13, Mr. Curtis took another to Mr. Spanner.

On December 16, Mr. Montgomery picked up a dead bird in rear of his house on the bar, and handed it to Mr. Nelson.

On December 29, Mr. J. Maughan received one. This is the last report, but the bird is said to have been shot some time before.

As far as I can learn, thirty-six were taken at Toronto.

The condition of the birds was good in most cases, but the last birds taken were poor.

An examination of some twenty-eight stomachs revealed no traces of food, though they had evidently not been empty long.

Three only of the stomachs contained a few small pieces of slate or gravel.

The sexual organs were unrecognizable in about four to one of the specimens, and of the others the number of males and females was about equal.

The plumage of the birds varied considerably, some being pure white all up the neck and throat, and jet black on the back of the neck and head; while others were duller on the back of the head and mixed with black on the throat, and a few were black all round the throat and neck; these latter were the smaller specimens, and probably younger birds.

All the birds were taken within 150 yards of the shore, and were very restless and seemed dissatisfied with the condition of things.

They were exceedingly tame, and could be approached to within a very few yards.

The following table gives measurements of twenty-one specimens examined by myself :

Length.	Wing.	Culmen.	Depth of bill at angle.	Gonys.	Tarsus.	Length.	Wing.	Culmen.	Depth of bill at angle.	Gonys.	Tarsus.
15.75	8.37	1.06	.44	.75	1.44	15.25	8.25	1.00	.37	.75	1.31
15.75	8.37	1.00	.44	.75	1.44	16.00	8.00				1.25
16.00	8.00	1.00	.37	.75	1.37	16.00	8.00				1.25
16.00	8.00	1.00	.44	.75	1.25	16.00	8.00	.87	.44	.75	1.25
.....	8.25	1.00	.37	.62	1.37		8.00	.87	.44	.75	1.12
.....	8.00	1.00	.44	.75	1.37	15.25	7.87	1.00	.37	.75	1.37
16.00	8.00	1.00	.37	.75	1.25	15.50	7.75	.87	.44	.62	1.37
.....	8.00	1.00	.44	.75	1.25		8.00	.87	.37	.75	1.25
.....	8.00	1.00	.44	.75	1.25	15.12	7.62	.87	.44	.62	1.37
.....	8.00	1.00	.44	.75	1.25		8.00	.81	.37	.75	1.25
15.87	8.25	.87	.37	.75	1.37						

The following are statements made by those who shot most of the birds, and had probably the best opportunity to note their habits while they were here.

Mr. Wm. Montgomery observes as follows :

"I saw the first bird shot by Mr. Curtis; I had never seen a bird like it before, though I have lived on the bar for about twenty-four years.

"About a week afterwards a flock of five pitched in a small gap in the ice, and C. Curtis secured four of them. The two days following were raw and cold, but all day long small flocks were seen flying westward.

"They seemed very restless, and would pitch every few hundred yards and rise again, always flying westward. I did not see any flying east or south; they were all within one hundred yards of shore.

"On Saturday morning, December 9; a flock of about fifteen pitched in a small bay in the ice directly behind our house, and I was within a few yards of them, but they took no notice of me; they huddled close together as though seeking shelter from the strong north-west wind, which was blowing for the three days they were so numerous.

"I did not disturb them, and they remained there nearly all day.

"A few days afterwards they all disappeared, but on December 16, I picked up a dead one and gave it to Mr. Nelson ; this was the last I saw or heard of them.

"As to the report of their being out in the lake, I can say that we are out about seven miles in the lake three times every week, and I have never observed a Guillemot more than one hundred and fifty yards from shore. In preference to going out in the lake they would invariably fly farther along the shore.

"I think the birds have probably skirted the shore of the lake completely round, and eventually gone back, down the St. Lawrence River, as I am sure not one-half of the birds observed were shot."

Mr. Chris. Curtis says :

"I have probably had more experience with these birds than any other person about Toronto, and I do think that not one-half of the birds observed were killed.

"I secured fourteen specimens altogether, and the number I took was very small compared with those I saw flying past. I agree with Mr. Montgomery that all the birds were very restless and yet not nervous, as I approached within a few yards of several, and had I worked a little could have shot double the number.

"I have not seen any since Mr. Montgomery found the dead one near his house."

Mr. Hector McDonald notes :

"I was with Mr. Curtis when he took the first bird.

"On December 8 we took ten.

"I am out on the lake three times a week, and all the birds I observed were close to shore.

"Those I secured were taken with comparative ease, as compared to the manœuvring required in duck shooting."

I have since been informed by Mr. Bunbury that a solitary bird remains about the Queen's wharf, and on Sunday, January 14, Messrs. Spanner and F. Dippie saw the bird in the same vicinity. It had probably been wounded, and was thus unable to leave with the others.

G. E. ATKINSON.

Mr. Atkinson's records on the unusual visit of Brunnich's Murres apply to the vicinity of Toronto, and I shall add a few notes on their movements, as far as can be ascertained, in other parts of the province.

Mr. Thos. McIlwraith, has recorded (Birds of Ontario, 1886, p. 33,) a specimen said to have been "found in the [Hamilton] Bay, in a state of extreme exhaustion, about twenty-five years ago," (*i.e.*, about 1861).

Mr. Wm. Couper, of Quebec says,* "This species makes an occasional foolish visit to the fresh waters of the St. Lawrence. In the fall of 1866 hundreds were destroyed by the inhabitants, who sold them to hucksters to exhibit on the market as an article of food."

Mr. Chamberlain says "it occasionally straggles as far west as Lake Ontario." (Cat. Can. Birds, 1887, p. 5.)

The above notes comprise all the records, as far as I know, that are published regarding these birds in Ontario.

In order to ascertain the route taken, and to what extent these birds had travelled inland, members of the Biological Society communicated with a number of observers in various districts, and the thanks of the Society are due to all of whom enquiries were made for their kindness and willingness to help us in every way.

The result of these enquiries has established the fact that the birds followed up the St. Lawrence River and along the north shore of Lake Ontario to its western end.

They also branched up the Ottawa River as far as the city of Ottawa, where they were seen at least a week before they were observed at Montreal.

At Hamilton a specimen was got the day after (November 20, 1893,) they were observed at Ottawa, but the majority were taken about the same time that they were so numerous at Toronto. Probably the first specimen got at Toronto was taken about the time they were first observed at Montreal, but the majority did not arrive at Toronto until eight or ten days later.

Dr. G. A. McCallum, of Dunnville, and Mr. Frank L. Webster,

* In "Our Northern and Eastern Birds," by E. A. Samuels, 1883, p. 573.

of Grimsby, report that none were observed in their respective districts.

Through the kindness of Mr. James Fletcher, I am able to present the following notes by Mr. George R. White on these birds in the district of Ottawa :

"The ones shot here, five in all, were *Uria lomvia*, Brunnich's Murres, and were birds of the year ; as far as I can ascertain, the flock consisted of twenty birds upon arrival, and fifteen upon departure, five having decided to remain.

"Four were shot on the Ottawa River, near Templeton, and one, as far as I can ascertain, was shot in the canal at St. Louis Dam. . . . These birds were all shot on the 19th of November."

Mr. Ernest D. Wintle, of Montreal, has given so much interesting and important evidence concerning these birds, that I will insert most of his observations :

"Large numbers visited this district the latter end of November last, and quite a number were shot near Montreal.

"Last April a fresh dead one was picked up on the ice at St. Andrews, P.Q., up the North River, about forty-five miles south-west of Montreal, and it was sent to me by a man who resides there, and who has hunted around that district for years, but had never seen a bird like it before.

"I received another specimen from the same man, which he shot on the Lake of Two Mountains, an expansion of the Ottawa River, a few miles below the mouth of the North River, and he wrote me at the time, the latter end of November last, that there were any 'amount' of them on the lake. . . .

"I saw a mounted specimen here which was shot out of a small flock last December (1892), on the Richelieu River, near St. John's, about twenty-seven miles south-east of Montreal, previous to which I had no record of Brunnich's Murre occurring in this district.

"I have measured the two specimens in my possession, and find them as follows : Length, $15\frac{1}{2}$ and $13\frac{1}{2}$ inches (one skin is stretched more than the other) ; wing, 8, 7 ; culmen, $1\frac{1}{8}$, 1 ; gonys, $\frac{5}{8}$, $\frac{1}{4}$; depth of bill through angle, 7-16, 7-16 ; tarsus, $1\frac{5}{8}$, $1\frac{3}{8}$; middle toe, $1\frac{3}{4}$, $1\frac{5}{8}$."

Mr. Wintle thinks "the cause of their taking such an extreme inland flight was through failure or scarcity of food in their natural waters and habitat."

Dr. C. K. Clarke, of Kingston, has very kindly given the matter his attention, and gathered together a number of notes which would otherwise probably have been lost.

He sends a clipping from the Kingston *Whig* of December 20, 1893, from which the following are extracts :—"A foolish Guillemot, similar to the one found by Dr. Wood, near Collins' Bay, was picked up dead on the Pittsburgh shore by Arthur Hora."

On December 23, 1893, he writes "the Guillemots have undoubtedly been seen here. I myself saw one. My son and I came across a Guillemot a few days ago. It was in Portsmouth bay, and we were quite close to it.

"Saw Mr. Stratford, the taxidermist, this morning; he says two specimens were sent to him recently.

"Mr. Routley tells me that these birds are quite common on Lake St. Francis, between here and Montreal."

Mr. Thos. McIlwraith, of Hamilton, writes as follows :—"The first of these Murres was brought to me on November 20, and about the 7th or 8th December the last lot that I heard of were secured; they were five in number, and so much reduced that they were taken alive by the hand; about twelve in all were taken here.

"I heard of them between the dates given above at Sherbrooke, Eastern Townships, Ottawa, Toronto and Hamilton.

"To make sure of the identification, I sent one to Mr. Ridgway, who confirmed it a 'Brunnichs Murre.'"

Mr. T. Patterson, mail clerk, G.T.R., Toronto, has furnished the following information :—"Mr. C. Beaty, mail clerk on Central Vermont Railway, residing in Montreal, informs me that Guillemots were numerous on Lake Champlain about the middle of December, 1893, and that many were collected about the same date on the St. Lawrence River, near Montreal, and that he collected several specimens, one of which was mounted and is now in his collection."

I purposed consulting the Observatory records as to wind and weather, to determine, if possible, the cause of the unusual

flight of *Uria lomvia* this season, but found it would require more time than I had at my disposal.

I therefore postponed the search until a more convenient season, when probably the Observatory records will show fuller data, as there are several points in the Gulf of St. Lawrence which are not heard from during the winter months.

HUBERT H. BROWN.

POLYBORUS CHERIWAY ON LAKE SUPERIOR.

ON JULY 17, 1892, a strong south-west gale struck the shore of Lake Superior, and the islands in the vicinity of Thunder Bay, district of Algoma; it blew all day, and on the following morning Mr. George Cosgrove, lighthouse keeper on Victoria Island, about thirty miles south-west of Port Arthur, picked up a bird which had struck the light during the storm.

Knowing the bird to be a stranger, he sent it to Port Arthur to have it mounted.

About three weeks later, being in town, the bird was shown to me; I made measurements and wrote a description of it, which I sent to Dr. Brodie. I was informed by him that it was a Caracara, probably *Polyborus cheriway*, a resident of southern Texas and Mexico, and probably was forced from its habitat by the storm above referred to.

I expected to be able to secure the bird, had not a sudden cold snap frozen over the bay and prevented Mr. Cosgrove from getting to Port Arthur before I had to leave.

It measures as follows:—Length, 22 inches; wing, $14\frac{3}{4}$; tail, $8\frac{1}{4}$; tarsus, $3\frac{1}{4}$; middle toe and claw, 3. It is a slender built bird, but evidently a very strong flyer; the legs are long and slim, much like those of the Marsh Hawk (*Circus hudsonicus*), and about the same size. A large patch extending from the base of the bill, behind the eye and down to the throat, bare and yellow in color, sparsely feathered on the throat; the nostrils turned upward, almost on top of the bill; a black occipital crest about four inches in length; neck and lower part of throat white, with a black spotted line around the lower part of neck; back and upper parts of wings dark brown, turning

black toward the edge of the wing, with a white bar across the first five primaries; the tail is white, barred transversely with light brown lines, and a broad, dark brown bar across the end and up the outer feathers; belly, dull black; iris, brown; feet, yellow.

This is undoubtedly the first record of this species in Canada.

On examining the drawings of Caracaras in "Swainson's Zoology" and other works, I can undoubtedly identify it as *Polyborus cheriway*.

G. E. ATKINSON.

CAPTURE OF PURPLE GALLINULE (*IONORNIS MARTINICA*) NEAR TORONTO.

DURING the past few years there have been a number of avian rareties recorded for Ontario, and to these may be added the capture of a Purple Gallinule, the report of which was presented by Dr. Brodie at a meeting of the Natural History Society of Ontario, held on April 26, 1892.

The bird was shot at the mouth of the Rouge River (sixteen miles east of Toronto) on April 8, 1892, by Thomas Chester, of Port Union.

Mr. Chester was pike-shooting when he saw the bird sitting on a log, and believing it to be a mud hen, he shot it.

It was exhibited at a subsequent meeting of the Society, and is at present the property of Dr. R. M. Bateman, of Pickering, Ontario.

"*Hab.*—The whole of tropical and warm-temperate America, south to Brazil; north, casually to Massachusetts, Maine, New York, Ohio, Wisconsin, Illinois and Missouri; Bermudas, and throughout West Indies. Not recorded from any part of the western States." Baird, Brewer and Ridgway.

There is, however, a record for San Antonio, Texas (*Auk*, vol. IX., 1892, p. 232.), and D. E. Lantz records the capture of a specimen in Kansas, on April 14, 1893. (*Auk*, vol. X., 1893, p. 300.)

Dr. Brewer says that "stragglers have been found along the entire Atlantic coast as far eastward as the Bay of Fundy," and

says that "about the time of the severe revolving southerly gale of the 30th of January, 1870, an individual of this species was driven into the harbor of Halifax, and was secured."

Mr. Montague Chamberlain, in his "Catalogue of Canadian Birds," mentions the above record (Halifax), and another taken near St. John, N.B.

Dr. J. H. Garnier, of Lucknow, in answer to an enquiry, writes, "Regarding the *Porphyris Martinica* (Linn), I saw only one, some ten years ago. It was on the St. Clair Flats, and was killed by some boys, who destroyed it by pulling its head from the body, and otherwise mutilating it. However, there was no doubt as to the identity of the bird, and I greatly regretted its loss."

HUBERT H. BROWN.

ÆSTRELATA HASITATA TAKEN AT TORONTO.

On October 30, 1893, a male specimen of the Black-capped Petrel was picked up at the water's edge on Toronto Island, by Mr. George Pierce, who gave the bird to Mr. Oliver Spanner.

It measured as follows:—Length, 15 inches; wing, $11\frac{1}{8}$.

The bird had evidently been in the water for a considerable time.

To show to what extent this species wanders sometimes, I will give Baird, Brewer and Ridway's account of their habitat.

"Warmer parts of the Atlantic Ocean, straying to Florida, England and France."*

Dr. Coues speaks of them as "of casual occurrence on the Atlantic coast, U.S."

In the winter of 1846, one specimen was taken off the coast of Florida, and another was shot on Long Island in July, 1850.

Mr. Ellison A. Smyth, Jr., records in *The Auk* (Vol. X., 1893, p. 361) the capture of another specimen in Virginia, about 200 miles inland, on August 30, 1893, "two days after the great cyclone."

The visits recorded are undoubtedly accidental, and show

*Baird, Brewer & Ridway: *Water Birds*, Vol. II., p. 395.

that their appearance is of rather rare occurrence in North America ; the bird got at Toronto is probably the first recorded for Canada.

It is now in the collection of Mr. J. H. Fleming.

HUBERT H. BROWN.

MOURNING WARBLER BREEDING AT TORONTO.

JULY 1, 1893.—In a very thick swampy spot up the Don River I saw a pair of Mourning Warblers (*Geothlypis philadelphia*) that appeared to be very much excited and annoyed at the presence of my dog. On my going to the spot, the male warbler dropped to the ground and ran ahead of us with its wings half raised. I caught the dog and searched carefully, and found a young bird still in the downy plumage. It ran well and hid cleverly, but at last I caught it. The female did not come very close to me until I actually had the young one in my hand, and then only for a moment ; she seemed to be attending on other young in the bushes a short distance away.

July 2.—Caught the male parent of my young Mourning Warbler in a trap cage by using the young one as a decoy. Whilst he was about the trap a Hawk (Broad-winged) dashed at him, and alighted on the spot the Warbler seemed to occupy, but the Warbler in some way slid from under the Hawk's claws, and ran into the thick bushes and escaped that danger.

July 26.—The young Mourning Warbler which I am raising is now showing some clear yellow along the sides of the breast and under the tail ; hitherto the head, neck and back have been brown ; the tail, primaries and secondaries olive green ; chin and throat brown, and breast and belly pale yellowish brown ; feet and tarsi flesh color ; the bird is very active and tame, and bathes every day.

August 11.—The young Mourning Warbler is now fully fledged and very active, but shows no sign of black on the throat or ashy blue on the head ; it catches flies on the wing with the greatest ease and certainty, and is very fond of all kinds of succulent green leaves.

BLACK RAIL (*PORZANA JAMAICENSIS*)
IN ONTARIO.

AUGUST 18, 1874.—Shot four of these birds this evening in the Dundas Marsh; my dogs put them up where the rushes had been mowed. This is the first time I have ever noticed them here, but afterwards during this season I saw several others.

C. W. NASH.

YELLOW RAIL (*PORZANA NOVEBORACENSIS*)
IN ONTARIO.

1874.—During the early autumn of this year I shot several of these birds in the Dundas Marsh, and saw many of them.

C. W. NASH.

CISTOTHORUS STELLARIS TAKEN AT TORONTO.

ON THE 29th August, 1891, I had the good fortune to capture a specimen of this bird at Toronto; this is the first, I believe, ever taken in Ontario.

I found the bird in a field of long, rank grass, a long distance from water or swamp, just east of Toronto.

C. W. NASH.

CANADIAN GALLS AND THEIR OCCUPANTS.

DIPLOSIS EREGERONI, N. S.

GALLS FOUND ON *Erigeron canadense*, variously situated from base of stem to tips of branches of flowering panicle; galls irregularly cylindrical, tapering at both ends, spindle-form, those on the branches more or less spherical; from 1 to 15 galls on a plant, seldom more than 10; found usually on diminutive plants, such as grow on wet, sandy places or on high, dry banks.

As yet I have not found any of these galls on robust plants.

The galls appear like swellings of the stem or branches, uniform in color with the plant, the surface with feint longitu-

dinal lines, slightly elevated ridges and ragged transverse elevations, resembling leaf scaurs.

The interior consists of uniform, soft, white pith, through which the larvæ tunnel.

On April 20, 1892, I made a collection of forty-seven galls and placed them in a glass jar; they were pitted with numerous small holes, and many of the occupants had evidently emerged.

On April 24, 1892, several cecidomyid larvæ had emerged, and were resting on the bottom of the jar; they were of a pale orange color, 3 mm. long, 0.4 mm. diameter.

The average size of ten of the largest and most cylindrical of the galls was 35 mm. by 12 mm.; diameter of stems under galls, 4 mm.; of ten of the upper and more spherical, 5 mm. by 4 mm.; diameter of branchlets under galls, 2 mm.

From May 30, 1892, to June 8, 1892, twenty-seven specimens of *diplosis* emerged.

From May 30, 1892, to June 23, 1892, numerous parasites of two species emerged.

On July 26, 1892, full-grown galls were found in growing plants, uniform in color with the stems of the plants; a few plants with galls were transplanted to the garden and carefully watched. *Diplosis* larvæ began to emerge October 15, 1892.

On November 13, 1892, a lot of seventy-three galls was collected from several localities, and all from diminutive plants.

The average size of ten of the largest, from the stems, was 35 mm. by 8 mm.; diameter of stems under galls, 4 mm. Average size of ten of the more spherical, from the branches, 3 mm. by 2 mm.; diameter of twigs under galls, 1 mm. These galls were pitted with minute holes.

From May 11, 1893, to June 19, 1893, numerous parasites of two species emerged—an *Ormyrus* and a *Pteromalus*.

From June 7, 1893, to June 15, 1893, several pairs of producers emerged.

The producer of this gall, for which I propose the name *Diplosis eregeroni*, bears a close resemblance to several of the cecidomyid gall-producers on herbaceous plants, and a recognizable description must be based on a full and careful comparison with these, many of which are undescribed.

This species differs from several of its congeners in having four conspicuous transverse white bands on dorsum of abdomen, and in having wide white annulations on the legs.

So far as yet determined the two parasites are restricted to this gall, and I propose *eregeroni* as the specific name. *Ormyrus eregeroni* and *Pteromalus eregeroni*.

It would appear to be the normal habit of the *Diplosis* larvæ to emerge from the galls in the fall season, and winter a short distance under the soil, but the parasite larvæ to winter in the gall.

W. BRODIE.

CALOPTENUS FEMUR-RUBRUM.

DURING THE SUMMER of 1893 this grasshopper appeared in large numbers in several of the middle and eastern counties of Ontario, and did much injury to farm crops.

The northern parts of the Counties of York and Ontario suffered very severely.

They were especially numerous in the Township of East Gwillimbury, taking the village of Mount Albert as a centre, with a radius of about four miles, extending into the Townships of Uxbridge and Scott, and many thousand dollars worth of farm products was destroyed over this area.

It was observed they were especially numerous on light, sandy soils, where a considerable acreage lay uncultivated.

They appeared first about the middle of June and rapidly increased, so that the injury done to the hay crop was very considerable. They next attacked the grain crops, and although oats were their favorite diet, they attacked, and in many localities completely destroyed the other cereals.

Later in the season they attacked all root and garden crops, except parsnips, stripping the leaves, and in many cases eating down into the roots.

In passing over fields or along roadways they would rise in immense, blinding swarms, numerous enough to devour every green thing.

It is to be hoped that next summer something unfavorable to their increase may occur, or many farmers will be eaten out of house and home.

GEO. BRODIE.

Craigieburn, Whitchurch.

THE COUNTY OF MIDDLESEX was scourged last summer by immense swarms of grasshoppers. The common red-legged species (*C. femur-rubrum*) was the most numerous, but the larger greenish-yellow species (*C. bivittatus*) was also numerous.

The hay and pasture were injured to some extent, but the oats suffered more than any of the other crops. The turnips, also cabbage, were injured to a great extent, not only along the margins of the fields, but over the whole area. Over entire fields the leaves were skeletonized, nothing but the mid and side ribs standing up.

The corn crop, nearly all farm crops, even onions, were considerably injured. Mangolds was the only crop which escaped.

They were especially numerous towards the latter part of the season, and the aftergrowth of hay fields and pastures generally was very much kept down by them, thus lessening dairy products to a considerable extent.

Prince Edward County, which I recently visited, seems to have suffered about as much as Middlesex, and it is now pretty certain that the plague was general over the Province.

It is much to be desired that full statistics, as to the amount of injury done to farm interests last season by grasshoppers, be compiled and published. It would be a very surprising record to many farmers, who are very apt to underestimate the injurious effect of insects.

In the absence of such statistics any estimate must be more or less inaccurate, but, taking as a basis of calculation the estimate that the injury on every farm amounted to one hundred dollars, a very moderate one, the aggregate is away up in the tens of millions of dollars.

W. A. BRODIE.

Belmont.

